NOAA REPORT

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NOAA Targets Coastal Pollution

As part of the Clinton Administration's Clean Water Action Plan, NOAA is initiating a multi-agency Clean Water Initiative to reduce polluted runoff, a major source of coastal water pollution and a key link in outbreaks of harmful algal blooms such as Pfiesteria.

NOAA will work with the Environmental Protection Agency to help 29 coastal states and territories complete development of management plans by Dec. 31, 1999 to reduce polluted runoff, also called nonpoint pollution.

"This is the first time agencies throughout the Federal government have joined to help protect our vital coastal resources from runoff pollution," said NOAA Administrator D. James Baker.

NOAA has requested $22 million in FY 1999 to support the Initiative. Baker said that the coastal nonpoint pollution reduction plans will help protect coastal communities from harmful substances and reduce the flow of pollution into coastal waters from nonpoint sources such as farms and city streets.

"In this, the International Year of the Ocean, it is crucial to educate the public about how every action, from changing a car's oil, to using pesticides and fertilizers, can affect the health of the coasts and of the ocean," Baker said.

Retired Air Force Gen. Authored Report

Kelly Named New NWS Head

Air Force Brigadier General John J. Kelly (Ret.) has been appointed as the 13th Director of the National Weather Service, succeeding Elbert W. "Joe" Friday, now the Assistant Administrator for the Office of Oceanic and Atmospheric Research.

Gen. Kelly is the former head of the Air Force Air Weather Service, which provides operational weather support for all Army and Air Force activities.

"I fully support Under Secretary Jim Baker's appointment of General Kelly as the new Director of the National Weather Service," said Secretary Daley. "I have every confidence that his experience and expertise will be of great benefit to the weather service, particularly as we near the end of its modernization program. I am fully committed to ensuring we have the best weather service in the world. I am confident that General Kelly—with the support of the 5,000 dedicated National Weather Service employees—will provide just that."

"General Kelly joins the weather

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The NOAA Ship Rainier in Victoria harbor, with the famous Victorian-style Empress Hotel at right.

Modernized *Rainier* Sails to Canada For Hydro Conference, Open House

The NOAA Ship *Rainier* (above left) sails into the harbor of Victoria, British Columbia, in preparation for the 1998 Canadian Hydrographic Conference, its first outing with its new state-of-the-art equipment. See story, page 6.

Daley Announces Disaster Reduction Initiative

Spring Flood Potential Bears El Niño's Marks

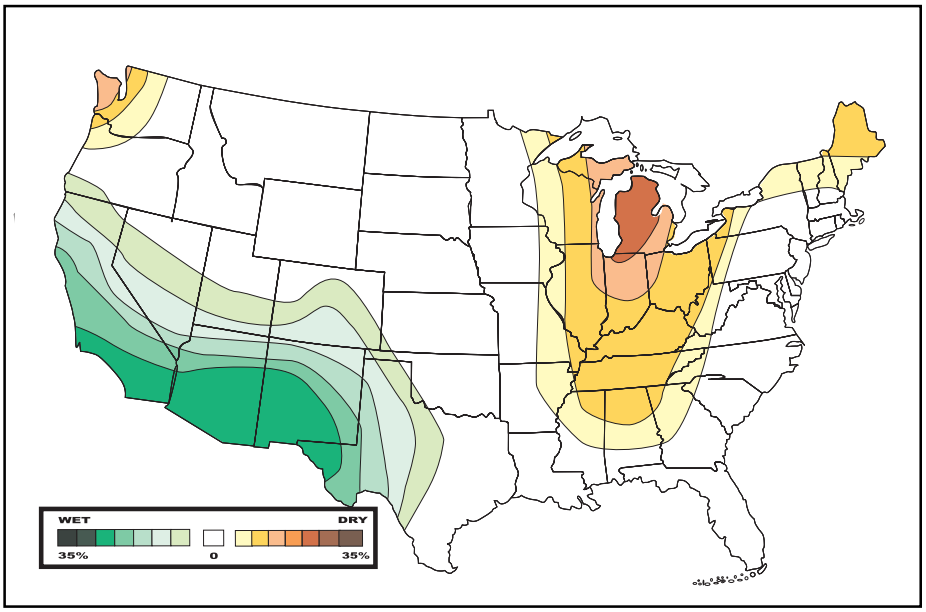
California and the Southeast United States, which have felt the brunt of El Niño-related severe weather this year, are most at risk for spring flooding, according to NOAA's annual National Hydrologic Outlook.

Preliminary information on snow cover, soil conditions and stream flow conditions from local National Weather Service offices suggests that some areas will be at risk for springtime flooding, but considering existing conditions, so far there are no areas of extreme concern this spring. Even with the impact of El Niño, this spring does not look as bad as the spring of 1997, when NOAA correctly predicted record flooding for the Red River of the North.

An area of above average likelihood of flooding stretches like a triangle from east Texas, northeast through central Pennsylvania, and then south to include most of Florida. Precipitation has been plentiful through this region as several storms, following the strong southern jet stream, tapped Gulf of Mexico moisture and deposited it over the Southeast and Mid-Atlantic, where wet soil contributes to the flood potential.

"This is good news for the coming spring," said Secretary William M. Daley. "We are not likely to see severe snowmelt flooding. This is in part because El Niño brought warmer temperatures and less precipitation to areas most affected last spring."

Conditions in the Red River basin are different from a year ago. There is much less snow, and flooding will range from minor to moderate. Over the past 100 years, almost one year out of two has seen spring flooding on the Red River. Unless conditions change dramatically, flooding this year will be much less severe than in 1997.



The Aouthwest should be drier than normal this spring, with the Midwest and parts of New England seeing more precipitation than average, according to NOAA predictions.

Disaster Reduction Initiative

Daley also used the news conference to announce a new Commerce Department Natural Disaster Reduction Initiative (NDRI) in the President's Fiscal Year 1999 Budget.

"We can do more to help prevent the damage that bad weather can do," said Daley, outlining a program that pools Commerce Department resources to help communities and businesses reduce the impact of natural disasters. "Commerce's NDRI brings together for the first time the resources of the Commerce Department to help build disaster resistant communities and jobs."

Secretary Daley described the NDRI as following a three-pronged approach:

- **Lower weather-related losses through improved construction techniques.** An additional $3 million a year will go for research on wind, seismic and fire engineering to make buildings more disaster resistant.
- **Improve prediction of damaging weather and related river flooding.** As the United States experiences the century's worst El Niño, costs in California alone have exceeded $500 million. The President's budget provides an additional $55 million a year for weather and flood forecasting.

  One key element of this provision is the first phase of a national implementation of the NWS's Advanced Hydrologic Prediction System, which will provide more accurate river forecasts with greater lead times for flood mitigation.

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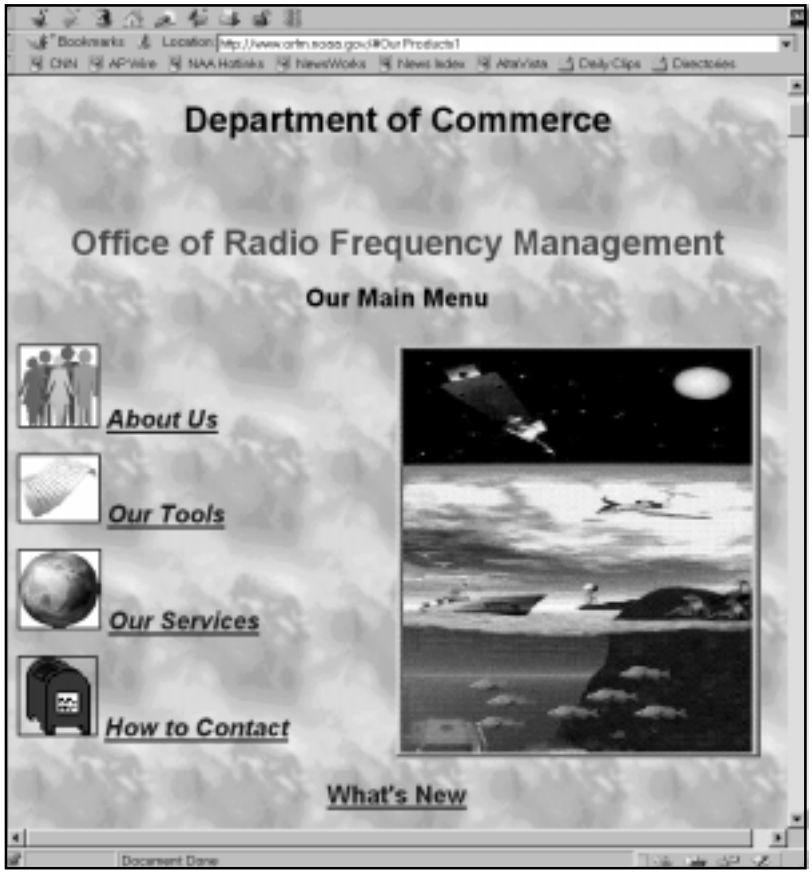
Web Site Focuses on Meteorology and Radio Frequency Spectrum Issues

The Commerce Department's Office of Radio Frequency Management (ORFM) is preparing to launch a Web site on how meteorological systems may be affected by current trends in spectrum use.

While a great deal of spectrum-related information is available in the press, most of it concerns high-visibility issues such as FCC spectrum auctions, or frequency changes to support High Definition TV. There appears to be no central location where one can find specialized information on spectrum use and meteorological systems.

Previous and anticipated changes in this policy will have an impact on weather forecasting worldwide, and will affect the design—and the price—of the meteorological related equipment used by government agencies and the private sector.

For example, satellite equipment must become more interference-resistant or suffer degradation of the information received. Meteorological agencies, including the NWS, may have to replace existing radiosonde systems with better-performing equipment costing significantly more. There are questions as to whether, or how soon, some countries will be able to afford the change in equipment.



The Commerce Department's Office of Radio Frequency Management Web site offers information on how trends in radio frequency spectrum use can affect meteorology.

Studies into the potential impact are now taking place both in the United States and internationally under the auspices of the International Telecommunications Union. This U.N. agency, headquartered in Geneva, Switzerland, develops international standards and policy for use of the radio spectrum.

Initially, the Web site, *http://www.orfm.noaa.gov*, will contain information about the office's functions and staff. Additional material about spectrum issues will be added to the page, such as links to Web sites of Federal agencies with related responsibilities, such as NOAA, FCC, and NTIA, as well as private organizations and major international bodies.

Eventually, this site should provide a central distribution point for meteorological spectrum information, and will be fed by government and international bodies and by interested citizens as well.

—Richard Barth

New 'Net Site for Public Affairs

NOAA's Office of Public Affairs has moved…on the web, at least.

You can now find us at ***http://www.publicaffairs.noaa.gov.***

Our new web site offers faster access for all our users, in NOAA offices and the general public as well. You can still get all the information you're used to getting from us, such as press releases, important NOAA documents, and NOAA Report Online.

Focus On...

'Classroom@Sea' Program Aboard the McArthur

The NOAA ship *McArthur* set the stage for learning via the Internet when a Seattle high school class came aboard in February to meet the captain, crew, and scientists as they began a new demonstration project called Classroom@Sea.

The project is taking advantage of innovations of the World Wide Web and satellite technologies to enable students in the classroom, for the first time, to interact with a NOAA research ship's captain, crew, and scientists at sea through an interactive Web site. Throughout the demonstration project, the *McArthur* will be the research platform, doing much of its work in national marine sanctuaries off the West Coast.

The project swung into action when tenth grade students from Kentlake High School received their "official" orders to begin construction of an interactive Web site from Lt. Cmdr. Bill Sites, commanding officer of the *McArthur*. From there it was smooth sailing as the *McArthur* departed the Everett Naval Station with students on board and headed toward its home port at the Pacific Marine Center on Seattle's Lake Union.

Sites reported that "We departed the naval station with 20 students; their teacher Mark Emery; C@S project manager Michele Malarney; University of Washington professor Leslie Herrenkohl; Dr. Bob Clark of NMFS, to instruct the students in the finer points of sediment and plankton sampling; Cmdr. Meribeth Reed and Lt. Richard Leland of the U.S. Public Health Service; the PMC medical staff; a skeleton crew to drive the ship, operate equipment and attend to the students; an overabundance of chilly gray weather; lots of french fries, corn dogs and pizza to fortify the students nutritionally, to win their confidence and set them at ease, and to ignite their enthusiasm and cement their dedication to the project; our standard suite of oceanographic equipment; and loads of positive energy to kick off the Classroom@Sea project.

Tenth grade students from Seattle's Kentlake High School learned about the McArthur on the ship's bridge.

"Our goal was to kick off the project, get the students familiar with the ship, her crew and capabilities, get them fully engaged and motivated, and plant a seed that will hopefully grow into something valuable for the Kentlake students and others—and maybe even provide some encouragement to consider ocean science as a career! The day was exhausting, but was a great experience for all of us. The ball is rolling now and we intend to keep it that way," Sites said.

Back in the classroom, the Kentlake students have begun construction of the interactive Web site that will provide teachers and students opportunities to interact with the oceanographic investigations and research data of the *McArthur's* scientists and crew. It is a work in progress, with formal guidance

provided by the *McArthur*, teachers who have gotten hands-on research experience aboard NOAA vessels through the agency's Teacher-at-Sea program, and National Marine Sanctuary scientists. Visit the URL site as it grows at *http://classroomatsea.noaa.gov.*

The demonstration project is built upon NOAA's Internet@Sea program initiated in 1996, in which NOAA computer engineers successfully incorporated off-the-shelf computer technologies aboard NOAA research vessels at sea to provide high speed Internet connections. Classroom@Sea will combine this technology and Teacher-at-Sea program concepts to work with regional schools in developing an appropriate framework for teaching and learning.

"The virtual learning community of Classroom@Sea is exciting because it is being constructed by students for students, while on-line, in order to bring NOAA to classrooms around the country," said Michele Malarney, a program specialist with NOAA's National Marine Sanctuary Program who is spearheading the program in partnership with the University of Washington. "We plan to expand the program to other NOAA research ships to further demonstrate how students and teachers can use the Web for doing and understanding science."

Students don their survival suits as part of a drill in the NOAA 'Classroom@Sea' program aboard the NOAA ship McArthur.

Indeed, after her classroom adventure aboard the *McArthur*, Malarney gained some excellent hands-on experience aboard another NOAA ship, the *Miller Freeman*, where she worked in the role of both researcher and Teacher at Sea from the "expert" point of view. Here she was able to further explore opportunities for implementing Classroom@Sea among the NOAA vessels and the regional communities in which they work, and to better understand the relevance of the ship's activities for teaching and learning ocean science and how the Web can be a useful tool for sharing that information.

"The people aboard the *Miller Freeman* were incredibly supportive and enthusiastic about Classroom@Sea. It was a great experience for me to work with them and learn more about their world of ocean science," Malarney said.

Through Classroom@Sea, students

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Modernized *Rainier* Sails to Canadian Hydro Conference

Newly outfitted with state-of-the-art technology that will make it one of the most modern and productive survey platforms of its type in the world, the NOAA ship *Rainier* participated in the 1998 Canadian Hydrographic Conference held in Victoria, British Columbia, in mid-March. The ship's participation helped increase the public's knowledge of the service that nautical chart makers provide to both the United States and Canada.

The ship held an open house that continued for two-and-a-half days, hosting more than 1,500 visitors and giving tours showing the newly acquired shallow water multibeam systems and accompanying Silicon Graphics Origin 2000 computer system. The new systems and a high speed network will be used to create high resolution, three dimensional terrain models of the ocean floor. These picture-like images of the bottom allow the hydrographer to do a complete analysis of the area and spot all navigational dangers. Using the hydrographers' data, chart makers can then create and update nautical charts with far greater accuracy and precision.

At the conference, ship personnel attended seminars that touched on topics ranging from current and tide predictions and Differential GPS to water dynamics and videography. Shallow water multibeam systems were the focus of

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Visitors to the Rainier take a look through a level while the ship was docked in Victoria harbor.

Gen. Kelly Named Weather Service Chief

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service at a critical time when serious concerns about sound fiscal management and systems development efforts have been raised," said Secretary Daley. "Kelly's past experience, strong leadership, and management ability are well suited to meet the challenges facing the National Weather Service in the 21st century."

"I am honored to be selected as the Director of the National Weather Service," said General Kelly. "I look forward to maintaining the high level of quality service the public has come to expect from this agency."

Last June, Secretary Daley asked Gen. Kelly to provide "a detailed evaluation of the National Weather Service budget and operations," amid concerns over the weather service's modernization and restructuring programs. After Kelly's report, the Secretary implemented a series of management reforms designed to improve services and reduce costs, and ended plans to close the NWS Southern Regional Headquarters in Ft. Worth, Texas. Daley also asked Congress for an additional $20 million for NWS, another of the report's recommendations. (The report is available online at *http://www.publicaffairs.noaa.gov.*)

Kelly assumed his duties in late February. He will be responsible for completing the modernization of the weather service, ensuring its cost-effective and efficient operation, and maintaining the quality of daily weather forecasts and warnings. Kelly will also be responsible for maintaining strong working relationships, not only with the academic community and private sector, but also with Congress and state and local governments.

General Kelly's career spanned 31 years and included seven years as Director of the Air Weather Service. He did graduate work in meteorology at Pennsylvania State University and received a masters degree in public administration from Auburn University. In addition, he is a Fellow of the American Meteorological Society.

"I would like to thank Bob Winokur for serving as the acting director of the National Weather Service during this difficult transition period," said Under Secretary Jim Baker. "We deeply appreciate his hard work and dedication."

Year of the Ocean Opens With a Splash

Oceanographer Jean-Michel Cousteau takes questions from elementary school children in the audience at the official West Coast kickoff of the Year of the Ocean, at the Dive Equipment Marketing Association convention at the Anaheim Convention Center.

The Year of the Ocean was launched on the West Coast with a big splash through a live underwater interactive netcast conversation. Ocean explorer Jean-Michel Cousteau, son of the famed Jacques Cousteau, spoke with Dr. Sylvia Earle from underwater at the Monterey Bay Aquarium. Cousteau hosted the event at the Dive Equipment Marketing Association convention at the Anaheim Convention Center.

Students from Highland Oaks Elementary School of Arcadia, Calf. took part in the kick-off event through the interactive conversation with National Geographic Explorer in Residence Dr. Sylvia Earle. Earle joined the kick-off via the Internet from underwater in the main kelp forest tank at the Monterey Bay Aquarium to answer questions from the students about the ocean.

"The Year of the Ocean campaign will provide both individuals and organizations with the opportunity to raise public awareness of the role the ocean plays in our lives, and to initiate solutions needed to sustain the marine resources on which we depend," said Cousteau.

"It's vital that we pass on not just a love of the ocean, but an understanding of how important the ocean is to our lives. Children can make a big difference. Even little things, like recycling or spending a few hours picking trash up from the shoreline, can ripple out and have a big effect on the ocean," Earle said.

—Matt Stout

Teachers don their gear on the McArthur as part of NOAA's 'Classroom@Sea'.

'Classroom@Sea' Brings Studies to Life

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can learn such things as: what does it mean to be a scientist and crew member aboard a NOAA ship conducting oceanographic and atmospheric research? How do you go about doing scientific investigations about oceans and the atmosphere? What are National Marine Sanctuaries and what is their role in ocean science and management? How do we utilize the information we've learned and incorporate it into decision-making?

The project team anticipates having the prototype Web site and a preliminary evaluation completed by the end of the school year in June.

—Jeanne Kouhestani

Federal-State Partnership to Protect West Coast Steelhead: An expanded state-federal partnership that combines species protection and state control will give steelhead trout much needed help in Oregon. The state is expected to provide properly functioning aquatic habitat for the long-term survival of salmon and steelhead in the state.

"This promises to be a new age for the Endangered Species Act," said Terry Garcia, NOAA's deputy administrator. "We are today combining regional natural resource expertise, federal responsibility for at-risk species and a serious sense of cooperation to protect one of America's most magnificent sport fish."

"Today's decision confirms that the Endangered Species Act has remarkable flexibility to work with states to

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fashion tailor-made conservation strategies good for at-risk species and grounded on solid local and state commitments," added Garcia.

A similar cooperative program will help protect some trout populations in California. Two other West Coast steelhead trout populations were placed on the Endangered Species List in March.

Hogarth Appointed: Dr. William T. Hogarth has been appointed to head NMFS' Southwest region. Hogarth has been acting in the position since March 1997.

NWS Scientists Join Journal: *Weather and Forecasting,* a widely read publication of the American Meteorological Society, has tapped two NWS scientists for its editorial staff–Gary Carter, chief of the Scientific Services Division for the NWS Eastern Region, and Dr. Joseph M. Pelissier, meteorologist-in-charge of the forecast office in Greer, S.C.

Disaster Reduction Program Unveiled

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- **Help communities and businesses safeguard jobs in hazard-prone areas.** The President is requesting $3 million per year of new funding for economic development. Secretary Daley said this will allow the Department of Commerce to work in public-private partnership to build disaster-resistant communities.

"Two-thirds of Federal disaster aid is weather related," said Secretary Daley. "And though we cannot prevent bad weather, we are getting better at predicting it. The Commerce Department's NDRI will help save lives and protect property. We will be working closely with FEMA, the Interior Department and other Federal agencies, with state and local governments and with our nation's businesses."

Aside from NOAA, Commerce agencies involved in the NDRI include the National Institute for Science and Technology, International Trade Administration, Bureau of Export Administration, Economic Development Administration and Bureau of Economic Analysis.

(For complete information, visit the National Spring Hydrologic Outlook Web site at: http://www.outlook.noaa.gov/floods98.)

Modernized *Rainier* Plays Host to Public in Victoria Harbor

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many of the presentations. Moderators and speakers extolled the virtues of the multibeam systems, and how they tackled problems associated with implementing them.

High precision, shallow-water multibeam systems are fairly new to the survey community. The typical usage involves a single survey platform and a rather limited survey area. The *Rainier's* implementation is likely the first time that several multibeam systems are used concurrently to cover large survey areas. A project of this type generates massive amounts of data and necessitates the use of high speed processing computers such as the Origin 2000 and its one-quarter terabyte disc storage system.

—Lt. Doug Baird

Coral Bleaching at Great Barrier Reef

El Niño-related drought and high ocean temperatures in the Pacific Ocean off Australia have resulted in coral reef bleaching around the Great Barrier Reef, raising concern about the future of these fragile ecosystems known as the "rainforests of the sea."

Bleaching "hot spots," with temperatures well above last year's levels, have been identified by NOAA satellite data and confirmed by data provided by the Australian Institute of Marine Science.

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